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## A better way to measure pay differentials among industries

*[Maury B. Gittleman](#)*

Are workers who are doing similar work paid more in some industries than in others? This question has been an important one in labor economics for many decades. A paper by Sumner H. Slichter, published in 1950, was among the first to address it, noting the differing wage rates for unskilled laborers in manufacturing industries. In the 1980s, spurred in part by the increasing availability of microdata that enabled controls for individual characteristics, there was a revival of interest in this question. Though the expanding availability of employer–employee matched databases has helped shift focus away from industry and towards individual employers, work in this area continues.

It is well known that large interindustry wage differentials remain even after attempts have been made to control for a wide array of individual characteristics. In 1991, Erica L. Groshen offered a taxonomy for models seeking to explain this finding. Such differentials may arise because 1) employers sort workers by ability; 2) compensating differentials lead to a variation of wages across industries; 3) there are random variations in pay, perhaps generated or perpetuated by costly information; 4) firms may pay efficiency wages to increase effort, reduce turnover, and improve worker morale; and 5) there may be rent sharing. Distinguishing among these competing theories is important because they have different implications for policies in a number of areas, including foreign trade, unemployment insurance, and industrial policy. In addition, variation in wages by industry and, more generally, by employer are important for understanding the distribution of pay, given the impact of those variations on the overall distribution and their implications for understanding and addressing differences in pay by demographic group.

The measurement of interindustry pay differentials and the resulting use of this information both to assess the empirical relevance of different labor market theories and to understand patterns in the distribution of pay have been hampered by the fact that measures of total compensation—as opposed to measures of just wages and salaries—are not available in the datasets traditionally used by labor economists, such as the Current Population Survey (CPS). In a recent article, Maury Gittleman and Brooks Pierce, economists at the Bureau of Labor Statistics, are the first, to their knowledge, to use compensation microdata in a study of interindustry pay differentials. In “[An improved measure of inter-industry pay differentials](#)” (*Journal of Economic and Social Measurement*, 2013), Gittleman and Pierce assert that using a compensation dataset is clearly preferable to using one with wages only, given that compensation measures the actual willingness of companies to pay and is what, in competitive labor market models, is being equated to the value of marginal product. Almost without exception, other studies have used wages and salaries to measure pay, thus omitting an important and growing portion of compensation, noncash benefits. Because nonwage compensation can sometimes exceed 40-to-50 percent of wages, its inclusion has the potential to alter the industry differences noted.

It is possible, for instance, that interindustry differences are overstated by wages and that including benefits would diminish such differences. For example, health insurance and legally required employer costs such as unemployment insurance can have fixed-cost attributes that reduce measured percentage differentials across groups of workers. Or tradeoffs between wage and nonwage forms of compensation could manifest along industry lines. On the other hand, there are a number of reasons to think that the exclusion of noncash compensation has led to an understatement of interindustry differences. For a

variety of reasons, higher benefits tend to go with higher wages. First, some benefits—for example, health insurance and defined-contribution pensions—are tax advantaged in the United States, making them relatively cheaper for workers with higher marginal tax rates. Second, demands for benefits tend to be very income elastic. Third, individuals with higher wages tend to have other characteristics, such as being older or being married, that correlate with greater demand for benefits.

To determine the direction of this effect, the study by Gittleman and Pierce makes use of a dataset that contains both wage and nonwage compensation, the Employer Costs for Employee Compensation (ECEC) data produced by the Bureau of Labor Statistics. They find that the inclusion of benefits increases industry dispersion, as measured by the standard deviation of interindustry differentials, by 16 percent when no controls are included and by an even greater 30 percent when controls are included. That is, the differences in pay from one industry to the next become larger when benefits are factored in.